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Exhibit C-19.4

Present and Potential Canadian and
Export Natural Gas Markets
of

TRANS-CANADA PIPE LINES LIMITED

FEBRUARY 1958

COMMONWEALTH SERVICES • INC.

NEW YORK, N. Y. • JACKSON, MICH. • WASHINGTON, D. C. • HOUSTON, TEX.

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TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

UNITED STATES MARKETS

CANADIAN MARKETS

PRESENT AND POTENTIAL CANADIAN AND EXPORT NATURAL GAS MARKETS OF TRANS-CANADA PIPE LINES LIMITED

I. General

The attached exhibits show a projection of the natural gas requirements of Trans-Canada Pipe Lines Limited to supply both its Canadian and its export markets. The period covered by the projection extends from the year 1957-1958 (November 1 to October 31) to the year 1987-1988. The annual period from November 1 to October 31 is selected to conform with the period of Trans-Canada's contract year. The projection includes both annual and maximum day gas requirements.

In making this market projection the period from 1957-1958 to, and including, 1962-1963 has been treated differently from the later years. The short term estimate, which is shown on Exhibit 5, is based on actual studies of the major market areas. These studies were made in the field in connection with the financing of Trans-Canada and several of its distributing company customers. They represent conditions as found in each of the areas studied, and were made after consultation with responsible operating gas company officials in the respective areas. The projections for the years following 1962-1963 are based on trended projections and industry experience, as described below.

In projecting the annual and maximum day gas requirements of Trans-Canada Pipe Lines Limited beyond the year 1962-1963 the

market area served by Saskatchewan Power Corporation and Union Gas Company and the market areas along Trans-Canada's presently proposed pipelines which are either presently served or proposed to be served by other distribution company customers of Trans-Canada, or appear to be either presently within economic distance from such pipelines, or will be in the not too distant future, were considered separately. In the case of the Saskatchewan Power Corporation territory the contribution of Trans-Canada Pipe Lines Limited to the total natural gas requirements of the area is minor and is expected to remain fixed during the forecast period. It was therefore not considered necessary, for the purposes of this study, to make a forecast of the total requirements of the Saskatchewan Power Corporation market area. As shown by Exhibit 7, the maximum-day sales by Trans-Canada to Saskatchewan Power will be 20,000 Mcf in 1957-58, reducing to 10,000 Mcf during each year of the forecast period after 1957-1958, in accordance with the terms of the present contract. On Exhibit 6 the corresponding annual sales have been estimated at a load factor of 60% for the year 1957-1958, 90% for the year 1958-1959 and 100% for the following years.

Trans-Canada will also not be the sole supplier of natural gas to Union Gas Company which company has substantial sources of local gas supply in Ontario and in addition has a contract for the import of substantial volumes from the United States which still has several years to run. The sales by Trans-Canada to Union Gas however, will be much larger than those to Saskatchewan Power but will not constitute a large enough part of the total requirements to necessitate a detailed projection of the total natural gas requirements in the Union Gas territory in order to

reasonably estimate Union's requirements for natural gas from Trans-Canada. Accordingly, we have estimated such requirements in this report on the basis of the contract volumes set forth in the contract between the two companies, and advice from Union as to what proportion of such contract volume they would probably take from Trans-Canada in future years.

There is a substantial potential natural gas market in the Province of Quebec, between the cities of Montreal and Quebec. This market could be served by an extension of Trans-Canada's pipeline system to the city of Quebec. Such an extension seems probable within the forecast period, and has been given active consideration by Trans-Canada, but, since it is not a certainty at the present time, no recognition has been given to these potential markets in this study.

Since the other Canadian markets along Trans-Canada's pipeline system will receive their total natural gas requirements from Trans-Canada, they have been projected in a group for the years from 1962-1963 to 1987-1988. This projection was based on observed trends in population and number of dwelling units in the market areas involved, and by the use of relevant factors to convert the numbers of dwelling units into numbers of customers and to translate the numbers of customers into maximum-day and annual gas requirements. The factors used were based on the detailed estimates for the six years from 1957-1958 to 1962-1963 inclusive which have been previously mentioned, and on the experience of natural gas companies in the United States as their natural gas markets have developed and matured. Since the basic projection is that of population, it seems appropriate

to discuss first the methods used in making this projection, and to follow this explanation with a step-by-step discussion of the process of developing this population projection into a projection of maximum-day and annual gas requirements.

II. Population and Dwelling Units

Exhibit 3 is a projection of the population and corresponding dwelling units in the market areas to be served by Trans-Canada, other than the Saskatchewan Power markets, the Union Gas markets and market areas along the Montreal-Quebec extension. This is the market area that was grouped for purposes of projection, as noted above. The population projection was based on a forecast by the Gordon Report ~~Dominion Bureau of Statisti~~cs for the entire Dominion, modified to reflect an observed higher rate of growth in the market areas considered in this projection. The observed difference in the rate of growth as shown in Exhibit 1 in the market areas considered as compared to the Dominion as a whole from 1951-56 was 0.627% per year. A projection of the annual rate of growth, reflecting these considerations, is shown in the third column in Exhibit 3. In making the related projection of residential dwelling units the factor in the column in Exhibit 3 headed "Ratio To Population" was trended from the ratios observed in 1951, 1956 and prior years. This ratio, as projected, shows a slow decline from year to year during the forecast period. The projection of total dwelling units was obtained by multiplying, year by year, the projected population by the ratios shown.

For comparison purposes a similar projection of population and dwelling units for the present and potential market areas of Trans-Canada, including the Union Gas Company area and the market areas along the Montreal-Quebec extension, is shown in Exhibit 2. In both Exhibit 2 and Exhibit 3 the Saskatchewan Power Corporation market areas have been excluded in view of the low proportion of the total gas requirements in this area to be supplied by Trans-Canada.

III. Residential Requirements

The derivation of residential maximum-day and annual gas requirements from this population projection is shown on Exhibit 8. As previously explained, the projections for the years 1957-58 to 1962-63 are not based on trends but are made from detailed estimates of these markets based on actual field investigations. These detailed short-term projections are used to develop the basic factors shown in columns 2, 4, 6 and 8 of Exhibit 8, which are then projected into the future on the basis of the observed trend, modified by industry experience as to the ultimate level to be reached by these several factors and ratios. The mathematical operations performed on Exhibit 8 to derive the maximum-day and annual residential gas sales requirements are indicated immediately under the column headings. It will be seen that a total residential customer projection is the first step, followed by a projection of residential heating customers. Appropriate factors reflecting the use per customer for general use and heating use are then applied to the respective numbers of customers to arrive at annual residential gas sales requirements. The maximum-day residential gas sales requirements are then derived from the annual requirements by the use of assumed load factors which are set forth at the head of columns 11 and 12. The load factors are based on industry experience and are typical of residential general and heating use.

IV. Commercial and Small Industrial Requirements

A projection of annual and maximum day commercial and small industrial gas sales requirements is similarly computed, and is shown on Exhibit 9. In this case the number of commercial customers shown in column 3 is derived from the previously estimated number of residential customers shown in column 1. It is the experience of the natural gas industry that a reasonably constant relationship may be expected between the number of residential gas customers and the number of commercial gas customers. This ratio is shown in column 2 of Exhibit 9, as estimated by the detailed procedures previously described for the years 1960-61 to 1962-63, and trended into the following years. Since the early development of natural gas markets tends to be more in the residential than the commercial classification, this ratio is inclined to be small in the early years and has been increased to the commonly encountered value of 6.25% in the year 1968-69 and following years. These percentages are used to project the number of commercial customers shown in column 3. By a similar process to that described in connection with the residential projection, the commercial heating customers are then estimated, and, by the use of appropriate factors for use per customer, a projection of maximum day and annual commercial gas sales requirements is derived.

V. Summary of Canadian Maximum Day Requirements

A summary of the projected maximum day gas sales by Trans-Canada to the Canadian markets is shown on Exhibit 7. As previously explained, the markets other than Saskatchewan Power Corporation and Union Gas Company are projected on a consolidated basis, and are then added to the Saskatchewan Power Corporation projection and the Union Gas Company projection to arrive at a total Canadian maximum day sales by Trans-Canada. In the consolidated estimate of markets other than Saskatchewan Power and Union the residential sales and commercial sales are carried forward from Exhibits 8 and 9, previously described. The firm industrial sales are projected on the basis of trends derived from the detailed short-range for the years 1957-58 to 1962-63. A study of the detailed short-range projections of firm industrial sales indicates that sales to present industrial customers may be expected to increase at the rate of 5% per year. In addition to the anticipated increase in requirements of the presently connected customers, it has been assumed that new industries will be connected to the natural gas lines to the extent of 25,000 Mcf of maximum day requirements every two years. The use of these assumptions results in the projection of firm industrial sales shown on Exhibit 7. The residential, commercial and firm industrial sales are then totalled, and an allowance is made for distribution company use and losses amounting to 5% of the total requirements.

It has been assumed that the maximum day requirements will be met to the extent of 30% by peak shaving in the year 1966-67 and following years and the maximum day peak-shaving volumes have been trended up to this amount from zero in 1957-58. These volumes of peak-shaving gas are shown in the

column headed "Less Peak-Shaving Gas" on Exhibit 7. The following column shows the expected contribution to the maximum day requirements of gas from The Consumers' Gas Company storage fields. These two amounts are deducted from the total maximum day gas requirements to arrive at the total maximum day gas requirements from Trans-Canada for the Canadian markets. These amounts are shown in the column headed "Total Requirements From T.C.P.L." The addition of the maximum day gas sales requirements of Saskatchewan Power Corporation and Union Gas Company result in the total Canadian maximum day sales by Trans-Canada shown in the right-hand column on this exhibit.

The projection of Union Gas Company requirements is shown in Exhibit 10. Under Trans-Canada's contract with Union Gas Company deliveries to Union may be interrupted at any time by Trans-Canada. However, Trans-Canada is obliged to deliver certain minimum annual and winter period (November 1 to March 31) volumes and Union is obliged to take at least 75% of these volumes. The total annual and winter period volumes are shown on Exhibit 10, as are the percentages of these volumes which Union estimates it will take. For the years 1968-69 and following, the annual and winter contract volumes remain at 64,000 MMcf and 21,300 MMcf respectively. Union estimates that its annual requirements will increase by 3,500 MMcf per year during this period and it has been assumed that the contract will be amended to provide for these increased deliveries.

VI. Summary Of Canadian Annual Requirements

Exhibit 6 is a summary of the projected annual gas sales by Trans-Canada to the Canadian market. The residential sales and commercial sales shown on this Exhibit are transferred from Exhibits 8 and 9, respectively. The industrial sales projection is in two parts, firm and interruptible. The projection of firm annual sales is derived from the projection of industrial firm maximum day sales on Exhibit 7, previously described. In making this computation a load factor of 70% for firm industrial sales has been assumed, based on industry experience. The interruptible industrial sales have been projected in a similar manner and using assumptions similar to those used in projecting the industrial firm sales as previously described. That is to say a 5% annual growth in present customers requirements has been assumed, and an allowance has been made for new customers in a manner similar to that described for the firm industrial sales. In the case of annual interruptible sales, however, the volumes projected as above described have been limited in some years by the requirement that the over-all pipeline annual load factor probably will not materially exceed 95%. It has been found in practice in the natural gas pipeline industry that the practical limitations on load dispatching usually preclude the attainment of a load factor much higher than 95%. This limitation has reduced the annual volumes of interruptible sales which would otherwise be estimated in the years 1958-59 to 1960-61 and 1978-79 to 1987-88. In the other years the full interruptible potential has been included and no provision has been made for curtailment. In this connection, it is noted that as can be computed from Exhibit 4, the pipeline annual sales load factor dropped to 87.5% - 90% in the years 1962-63 through 1964-65, notwithstanding the fact that the full estimated interruptible potential load was

included and reflected in the estimated annual sales shown for those years. Had it been assumed in the studies that Trans-Canada's interruptible agreement with Tennessee Gas Transmission Company at Niagara Falls had been operative in those years, the pipeline annual sales load factor in such years would have easily been raised to 95%. Under such interruptible agreement, Tennessee agrees to take any volumes of excess gas which Trans-Canada may have from time to time above the requirements of its Canadian markets, up to 200,000 Mcf per day.

The total annual sales of Trans-Canada, as projected in the manner described above, are shown on Exhibit 6 under the column headed "Total Sales MMcf." The next column shows the distributing company use and losses, computed at 5%. The column headed "Less Peak-Shaving Gas" in Exhibit 6 shows the annual volumes of peak-shaving gas corresponding to the maximum day volumes shown on Exhibit 7. The amounts shown under the heading "Plus Net Gas Input To Storage MMcf" represent volumes required by Consumers' Gas Company to complete the filling of its underground gas storage field. The consolidated annual gas sales requirements shown are then added to the sales to Saskatchewan Power and Union to arrive at the total Canadian annual sales by Trans-Canada, shown in the right-hand column of this exhibit.

VII. Summary Of Total Canadian And Export Requirements

The Canadian maximum day and annual requirements, projected as described above are carried forward to Exhibit 4, and are there added to the annual and maximum day requirements for export at Emerson, Manitoba. The total sales requirements thus derived are increased by 10% to reflect Trans-Canada's requirements for compressor station fuel and for pipeline losses, to arrive at the total annual and maximum day requirements shown. The annual Trans-Canada requirements are accumulated in the column headed "TCPL Total Requirements Cumulative." The figures in this column show the cumulative total production of Canadian gas reserves which will be required to meet the requirements as projected herein.

VIII. Estimated Sales to Canadian Distribution Company Customers

Exhibit 5 shows the estimated annual and maximum-day sales of Trans-Canada to its various proposed Canadian distribution company customers and to Midwestern Gas Transmission at Emerson through the year 1962-1963. Such estimated sales are based on the detailed field studies referred to above. As shown on the Exhibit, a substantial portion of Trans-Canada's initially proposed sales in Canada have now been contracted for.

TRANS-CANADA PIPE LINES LIMITED

Actual And Projected Total Population And Residential Dwelling Units In All Present And Potential Market Areas Of Trans-Canada Exclusive Of Saskatchewan Power Corp. Markets (Includes Market Areas Of Union Gas Company And Market Areas Along Probable Future Montreal-Quebec Extension Of Trans-Canada's Pipeline).

Year	Population: Total	Population: Annual Rate of Growth %	Residential Dwelling Units: Ratio to Pop.	Residential Dwelling Units: Total
1931	4,206,409 1/			
1941	4,787,124 1/	1.250 Av.		
1951	5,917,621 1/	2.140 Av.	1:3.93	1,512,569 1/
1956	6,996,208 1/	3.404 Av.	1:3.83	1,826,686
1957	7,206,094	3.00	1:3.82	1,886,412
1958	7,422,277	3.00	1:3.81	1,948,104
1959	7,644,945	3.00	1:3.80	2,011,827
1960	7,874,293	3.00	1:3.79	2,077,649
1961	8,110,522	3.00	1:3.78	2,145,640
1962	8,340,050	2.83	1:3.77	2,212,214
1963	8,576,073	2.83	1:3.76	2,280,870
1964	8,818,776	2.83	1:3.75	2,351,673
1965	9,068,347	2.83	1:3.74	2,424,691
1966	9,324,981	2.83	1:3.73	2,499,994
1967	9,578,620	2.72	1:3.72	2,574,897
1968	9,839,158	2.72	1:3.71	2,652,064
1969	10,106,783	2.72	1:3.70	2,731,562
1970	10,381,687	2.72	1:3.69	2,813,465
1971	10,664,069	2.72	1:3.68	2,897,844
1972	10,953,065	2.71	1:3.67	2,984,486
1973	11,249,893	2.71	1:3.66	3,073,741
1974	11,554,765	2.71	1:3.65	3,165,689
1975	11,867,899	2.71	1:3.64	3,260,411
1976	12,189,519	2.71	1:3.63	3,357,994
1977	12,519,855	2.71	1:3.62	3,458,523
1978	12,859,143	2.71	1:3.61	3,562,089
1979	13,207,626	2.71	1:3.60	3,668,785
1980	13,565,553	2.71	1:3.59	3,778,705
1981	13,933,179	2.71	1:3.58	3,891,949
1982	14,309,375	2.70	1:3.57	4,008,228
1983	14,695,728	2.70	1:3.56	4,128,013
1984	15,092,513	2.70	1:3.55	4,251,412
1985	15,500,011	2.70	1:3.54	4,378,534
1986	15,918,511	2.70	1:3.53	4,509,493
1987	16,348,311	2.70	1:3.52	4,644,406
1988	16,789,715	2.70	1:3.51	4,783,394

1/ Actual per Dominion Bureau of Statistics Census data for markets included and reflected on this tabulation.

TRANS-CANADA PIPE LINES LIMITED

Actual And Projected Total Population And Residential Dwelling Units In Market Areas To Be Served By Trans-Canada Other Than Saskatchewan Power Markets, Union Gas Markets, And Market Areas Along Montreal-Quebec Extension

	Population		Residential Dwelling Units	
Year	Total	Annual Rate Of Growth %	Ratio To Population	Total
1931	3,047,007 1/			
1941	3,471,882 1/	1.012		
1951	4,284,758 1/	2.124	1:3.99	1,073,874 1/
1956	5,086,560 1/	3.490	1:3.89	1,307,599 1/
1957	5,241,700	3.050	1:3.88	1,350,954
1958	5,401,572	3.050	1:3.87	1,395,755
1959	5,566,320	3.050	1:3.86	1,442,052
1960	5,736,093	3.050	1:3.85	1,489,894
1961	5,911,044	3.050	1:3.84	1,539,334
1962	6,082,464	2.900	1:3.83	1,588,111
1963	6,258,958	2.900	1:3.82	1,638,470
1964	6,440,468	2.900	1:3.81	1,690,412
1965	6,627,241	2.900	1:3.80	1,744,011
1966	6,819,430	2.900	1:3.79	1,799,322
1967	7,009,010	2.780	1:3.78	1,854,235
1968	7,203,860	2.780	1:3.77	1,910,838
1969	7,404,127	2.780	1:3.76	1,969,183
1970	7,609,962	2.780	1:3.75	2,029,323
1971	7,821,519	2.780	1:3.74	2,091,315
1972	8,038,175	2.770	1:3.73	2,155,007
1973	8,260,832	2.770	1:3.72	2,220,654
1974	8,489,657	2.770	1:3.71	2,288,317
1975	8,724,820	2.770	1:3.70	2,358,059
1976	8,966,498	2.770	1:3.69	2,429,945
1977	9,214,870	2.770	1:3.68	2,504,041
1978	9,470,122	2.770	1:3.67	2,580,415
1979	9,732,444	2.770	1:3.66	2,659,138
1980	10,002,033	2.770	1:3.65	2,740,283
1981	10,279,089	2.770	1:3.64	2,823,926
1982	10,562,792	2.760	1:3.63	2,909,860
1983	10,854,325	2.760	1:3.62	2,998,432
1984	11,153,904	2.760	1:3.61	3,089,724
1985	11,461,752	2.760	1:3.60	3,183,820
1986	11,778,096	2.760	1:3.59	3,280,807
1987	12,103,171	2.760	1:3.58	3,380,774
1988	12,437,219	2.760	1:3.57	3,483,815

1/ Actual per Dominion Bureau of Statistics Census data for markets included and reflected on this tabulation.

TRANS-CANADA PIPE LINES LIMITED

Summary of Trans-Canada's Projected Natural Gas Purchase Requirements
(Note: All volumes shown are at 14.73 psia)

ANNUAL REQUIREMENTS - MMCF

TCPL Year (Nov. 1-Oct. 31)	Gas Sales: U.S. Export at Emerson	Gas Sales: Canadian	Gas Sales: Total Sales	TCPL Fuel & Losses @ 10%	TCPL Total Requirements: Annual	TCPL Total Requirements: Cumulative
1957-58		22,545	22,545	2,255	24,800	24,800
1958-59	69,136	92,454	161,590	16,159	177,749	202,549
1959-60	73,201	145,056	218,257	21,826	240,083	442,632
1960-61	73,406	188,214	261,620	26,162	287,782	730,414
1961-62	72,398	229,643	302,041	30,204	332,245	1,062,659
1962-63	72,680	255,106	327,786	32,779	360,565	1,423,224
1963-64	72,971	276,528	349,499	34,950	384,449	1,807,673
1964-65	73,343	306,047	379,390	37,939	417,329	2,225,002
1965-66	73,343	341,085	414,428	41,443	455,871	2,680,873
1966-67	73,343	371,398	444,741	44,474	489,215	3,170,088
1967-68	73,343	409,986	483,329	48,333	531,662	3,701,750
1968-69	73,343	444,888	518,231	51,823	570,054	4,271,804
1969-70	73,343	478,823	552,166	55,217	607,383	4,879,187
1970-71	73,343	513,768	587,111	58,711	645,822	5,525,009
1971-72	73,343	549,244	622,587	62,259	684,846	6,209,855
1972-73	73,343	585,607	658,950	65,895	724,845	6,934,700
1973-74	73,343	615,747	689,090	68,909	757,999	7,692,699
1974-75	73,343	658,237	731,580	73,158	804,738	8,497,437
1975-76	73,343	698,041	771,384	77,138	848,522	9,345,959
1976-77	73,343	737,344	810,687	81,069	891,756	10,237,715
1977-78	73,343	776,925	850,268	85,027	935,295	11,173,010
1978-79	73,343	820,124	893,467	89,347	982,814	12,155,824
1979-80	73,343	859,346	932,689	93,269	1,025,958	13,181,782
1980-81	73,343	894,191	967,534	96,753	1,064,287	14,246,069
1981-82	73,343	942,481	1,015,824	101,582	1,117,406	15,363,475
1982-83	73,343	979,129	1,052,472	105,247	1,157,719	16,521,194
1983-84	73,343	1,023,297	1,096,640	109,664	1,206,304	17,727,498
1984-85	73,343	1,071,007	1,144,350	114,435	1,258,785	18,986,283
1985-86	73,343	1,118,497	1,191,840	119,184	1,311,024	20,297,307
1986-87	73,343	1,160,614	1,233,957	123,396	1,357,353	21,654,660
1987-88	73,343	1,210,760	1,284,103	128,410	1,412,513	23,067,173
Totals For Period (31 Yrs.)	2,194,024	18,776,132	20,970,156	2,097,017		

MAXIMUM DAY REQUIREMENTS - MCF

TCPL Year (Nov. 1-Oct. 31)	Gas Sales: U.S. Export at Emerson	Gas Sales: Canadian	Gas Sales: Total Sales	TCPL Fuel & Losses @ 10%	TCPL Total Requirements
1957-58		86,661	86,661	867	87,528
1958-59	204,000	261,676	465,676	46,568	512,244
1959-60	204,000	424,982	628,982	62,898	691,880
1960-61	204,000	549,948	753,948	75,395	[illegible]
1961-62	204,000	671,470	875,470	87,547	[illegible]
1962-63	204,000	782,661	986,661	98,666	[illegible]
1963-64	204,000	889,980	1,093,980	109,398	[illegible]
1964-65	204,000	947,565	1,151,565	115,157	[illegible]
1965-66	204,000	1,022,812	1,226,812	122,681	[illegible]
1966-67	204,000	1,059,757	1,263,757	126,376	[illegible]
1967-68	204,000	1,194,348	1,398,348	139,835	[illegible]
1968-69	204,000	1,300,230	1,504,230	150,423	[illegible]
1969-70	204,000	1,416,298	1,620,298	162,030	[illegible]
1970-71	204,000	1,517,219	1,721,219	172,122	[illegible]
1971-72	204,000	1,634,798	1,838,798	183,880	[illegible]
1972-73	204,000	1,734,534	1,938,534	193,853	[illegible]
1973-74	204,000	1,808,654	2,012,654	201,265	[illegible]
1974-75	204,000	1,934,146	2,138,146	213,815	[illegible]
1975-76	204,000	2,059,090	2,263,090	226,309	[illegible]
1976-77	204,000	2,153,749	2,357,749	235,775	[illegible]
1977-78	204,000	2,261,150	2,465,150	246,515	[illegible]
1978-79	204,000	2,371,332	2,575,332	257,533	[illegible]
1979-80	204,000	2,483,865	2,687,865	268,787	[illegible]
1980-81	204,000	2,584,283	2,788,283	278,828	[illegible]
1981-82	204,000	2,723,446	2,927,446	292,745	[illegible]
1982-83	204,000	2,829,061	3,033,061	303,306	[illegible]
1983-84	204,000	2,956,346	3,160,346	316,035	[illegible]
1984-85	204,000	3,093,838	3,297,838	329,784	[illegible]
1985-86	204,000	3,230,698	3,434,698	343,470	[illegible]
1986-87	204,000	3,352,073	3,556,073	355,607	[illegible]
1987-88	204,000	3,496,585	3,700,585	370,059	[illegible]

Note: To convert above volumes at 14.73 psia to 14.4 psia multiply by 1.02292

TRANS-CANADA PIPE LINES LIMITED

Estimated Annual And Maximum Day Gas Sales By Customers And Gas Purchase Requirements

(Note: All volumes shown are at 14.73 psia; to convert to 14.4 psia multiply by 1.02292)

		1957-1958			1958-1959			1959-1960		
TCPL Year (Nov. 1-Oct. 31)	Class	Max. Day Demand Mcf	Annual Deliveries MMcf	Annual Load Factor %	Max. Day Demand Mcf	Annual Deliveries MMcf	Annual Load Factor %	Max. Day Demand Mcf	Annual Deliveries MMcf	Annual Load Factor %
Canadian Sales Contracted For										
Saskatchewan Power Corporation	F	20,000	4,380.0	60.0	10,000	3,285.0	90.0	10,000	3,650.0	100.0
Plains Western Gas & Electric Co.	F	4,205	844.0	55.0	5,978	1,200.0	55.0	7,672	1,540.0	55.0
	XS	-	780.0	-	-	1,230.0	-	-	-	-
Total		4,205	1,624.0		5,978	2,430.0		7,672	1,540.0	
Inter-City Gas Limited	F	4,000	222.0	10.9	7,210	974.0	37.0	9,560	1,291.0	37.0
Winnipeg & Central Gas Co.	F	22,000	4,600.0	57.3	30,300	6,866.0	62.1	36,600	8,319.0	62.3
Northern Ontario Natural Gas Co. Ltd.										
Western Zone	F							27,000	9,542.8	96.8
	XS								3,359.8	
Total		9,236	1,870.8	55.5	13,264	12,116.1	250.3	27,000	12,902.6	130.9
Northern Zone	F				28,000	7,021.5	68.7	42,500	10,670.2	68.8
	XS				-	3,230.1		-	2,536.8	
Total					28,000	10,251.6	100.3	42,500	13,207.0	85.1
Central Zone	F				1,231	149.9	33.4	3,047	327.2	29.4
Consumers Gas Company:										
Central Zone	F				82,500	27,745.0	92.1	100,000	33,428.0	
Eastern Zone	F				5,500	2,290.0	114.1	10,900	2,985.0	75.0
Union Gas Company of Canada:										
Gas Sales	F (An.)							33,775(Av.)	15,375.0	124.7
Return of Borrowed Gas	-							-	3,000.0	-
Total								33,775(Av.)	18,375.0	149.1
Lakeland Natural Gas Company	F	2,938	332.8	31.0	6,274	1,214.1	53.0	10,368	2,388.3	63.1
Quebec Nat. Gas Corp. (Montreal Is.)	F	24,522	5,349.3	59.8	46,000	16,286.0	97.0	72,000	25,491.6	97.0
	XS	-	-	-	-	-	-	-	-	-
	OP	-	-	-	-	1,135.5	-	-	5,087.3	-
Total		24,522	5,349.3	59.8	46,000	17,421.5	103.8	72,000	30,578.9	116.4
Total Contracted For		86,901	18,378.9		236,257	84,743.2		363,422	128,992.0	
Canadian Markets Not Contracted For										
Kingston	F				1,696	491.3	79.3	2,933	756.3	70.6
Peterborough	F				1,599	323.8	55.5	2,655	618.5	63.9
Augusta Natural Gas Company	F	6,000	2,670.0	121.9	6,900	3,350.0	133.0	17,200	7,600.0	121.1
Lakeland Natural Gas Co. (Additional)	F	6,600	2,610.5	108.4	6,600	2,633.5	109.3	6,600	2,948.5	122.4
Quebec Natural Gas Corporation										
Additional For Montreal Island	F	-	-	-	-	-	-	-	-	-
South Shore (15 Mi. Radius of Montreal Island)	F				4,579	4,586.0	274.4	9,590	5,277.0	150.8
Consumers Gas Co. (Additional)	F				10,000	3,103.0	85.0	10,000	3,103.0	85.0
Misc. Possible Future Loads (Allow.)	F				-	-	-	25,000	6,390.0	70.0
Total Not Contracted For		12,600	5,280.5	114.8	31,374	14,487.6	126.5	73,978	26,693.3	98.9
Total Canadian Markets		99,501	23,659.4	65.1	267,631	99,230.8	101.6	437,400	155,685.3	97.5
U. S. Export Sales										
Midwestern at Emerson	F	-	-	-	204,000	69,136.0	92.8	204,000	73,201.0	98.3
Total Sales		99,501	23,659.4		471,631	168,366.8		641,400	228,886.3	
Plus: TCPL Fuel and Losses @ 10%		9,950	2,365.9		47,163	16,836.7		64,140	22,888.6	
Total Gas Purchase Requirements		109,451	26,025.3	65.1	518,794	185,203.5	97.8	705,540	251,774.9	97.8

billions

Exhibit 5
Page 2

TRANS-CANADA PIPE LINES LIMITED

(Note: All volumes shown are at 14.73 psia; to convert to 14.4 psia multiply by 1.02292)

TCPL Year (Nov. 1-Oct. 31)	Class	1960-1961 Max. Day Demand Mcf	1960-1961 Annual Deliveries MMcf	1960-1961 Annual Load Factor %	1961-1962 Max. Day Demand Mcf	1961-1962 Annual Deliveries MMcf	1961-1962 Annual Load Factor %	1962-1963 Max. Day Demand Mcf	1962-1963 Annual Deliveries MMcf	1962-1963 Annual Load Factor %
Canadian Sales Contracted For										
Saskatchewan Power Corporation	F	10,000	3,650.0	100.0	10,000	3,650.0	100.0	10,000	3,650.0	100.0
Plains Western Gas & Elec. Co.	F	8,300	1,666.0	55.0	9,000	1,807.0	55.0	9,450	1,897.0	55.0
	XS	-	-	-	-	-	-	-	-	-
Total		8,300	1,666.0	55.0	9,000	1,807.0	55.0	9,450	1,897.0	55.0
Winnipeg & Central Gas Co.	F	38,800	8,820.0	62.3	46,400	10,014.0	57.1	51,040	10,944.0	58.7
Inter-City Gas Limited	F	10,825	1,739.0	44.0	12,075	1,932.0	43.8	12,680	2,032.0	43.9
Northern Ontario Natural Gas Co. Ltd.:										
Western Zone	F	29,000	13,468.0	127.2	31,000	14,047.0	124.1	33,000	14,603.2	121.2
	XS	-	-	-	-	2,810.0	-	-	2,631.1	-
Total		29,000	13,468.0	127.2	31,000	16,857.0	150.0	33,000	17,234.3	143.1
Northern Zone	F	59,000	22,141.0	102.8	64,400	23,234.2	98.8	69,200	24,268.0	96.1
	XS	-	-	-	-	2,837.3	-	-	2,459.5	-
Total		59,000	22,141.0	102.8	64,400	26,071.5	110.9	69,200	26,727.5	105.8
Central Zone	F	4,252	454.6	29.3	5,100	587.0	32.2	5,800	712.9	33.7
Consumers Gas Company:										
Central Zone	F	115,000	39,335.0	93.7	140,000	45,338.0	88.7	165,000	51,080.0	84.8
Eastern Zone	F	17,000	4,303.0	69.3	20,600	5,126.0	68.2	23,800	6,060.0	69.8
Union Gas Company:										
Gas Sales	F (An.)	40,728(Av.)	18,375.0	-	46,192(Av.)	21,000.0	-	52,649(Av.)	24,000.0	-
Return of Borrowed Gas	-	-	3,000.0	-	-	-	-	-	-	-
Total		40,728	21,375.0	-	46,192	21,000.0	-	52,649	24,000.0	-
Lakeland Natural Gas Company	F	14,409	3,790.0	72.1	19,559	5,249.7	73.5	25,096	6,858.5	74.9
Quebec Nat. Gas Corp. (Montreal Is.)	F	88,000	30,114.0	93.8	102,000	35,264.1	94.7	112,000	38,836.4	95.0
	XS	-	-	-	-	-	-	-	-	-
	OP	-	-	-	-	6,248.0	-	-	5,662.0	-
Total		88,000	30,114.0	93.8	102,000	41,512.1	111.5	112,000	44,498.4	107.9
Total Contracted For		435,314	150,855.6	-	511,726	179,144.3	-	569,715	195,694.6	-
Canadian Sales Not Contracted For										
Kingston	F	4,166	1,109.8	73.0	5,578	1,537.5	75.5	6,510	1,941.8	81.7
Peterborough	F	4,323	1,034.7	65.6	5,925	1,618.4	74.8	7,065	2,080.5	80.7
Augusta Natural Gas Company	F	19,700	8,600.0	119.6	22,500	9,600.0	116.9	25,300	10,600.0	114.8
Lakeland Natural Gas (Additional)	F	6,000	2,971.5	-	6,000	2,971.5	135.7	6,600	2,971.5	123.4
Quebec Natural Gas Company:										
Additional For Montreal Island	F	12,000	10,478.0	239.2	29,000	13,223.0	124.9	44,000	12,875.0	80.2
South Shore Area (15 Mi. Radius of Montreal Island)	F	12,626	5,658.1	122.8	19,649	6,577.7	91.7	24,702	7,649.0	84.8
Consumers Gas Co. (Additional)	F	20,000	6,205.0	85.0	20,000	6,205.0	85.0	25,000	7,756.0	85.0
Misc. Possible Future Loads (Allow.)	F	25,000	6,390.0	70.0	50,000	12,780.0	70.0	50,000	12,780.0	70.0
Total Not Contracted For		103,815	42,447.1	112.0	158,652	54,513.1	94.1	189,177	58,653.8	84.9
Total Canadian Sales		539,129	193,302.7	98.2	670,378	233,657.4	95.5	758,892	254,348.4	91.8
U. S. Export Sales										
Midwestern Gas Trans. at Emerson	F	204,000	69,136.0	92.8	204,000	69,136.0	92.8	204,000	69,136.0	92.8
Total Gas Sales		743,129	262,438.7	96.8	874,378	302,793.4	94.9	962,892	323,484.4	92.0
Plus: TCPL Fuel and Losses @ 10%		74,313	26,243.9	-	87,438	30,279.3	-	96,289	32,348.4	-
Total Gas Purchase Requirements		817,442	288,682.6	96.8	961,816	333,072.7	94.9	1,059,181	355,832.8	92.0

TRANS-CANADA PIPE LINES LIMITED

Summary Of Projected Annual Gas Sales By Trans-Canada To Canadian Markets
(Other Than Montreal-Quebec Extension Markets)

TCPL Year (Nov. 1 - Oct. 31)	Sales To Markets Other Than Saskatchewan Power Corp. And Union Gas Company							Plus Net Gas Input To Storage MMcf	Total Requirements From TCPL MMcf	Sales To Saskatchewan Power Corp. 1/ MMcf	Sales To Union Gas Co. MMcf	Total Canadian Annual Sales By TCPL MMcf
	Residential Sales MMcf	Commercial Sales MMcf	Industrial Sales Firm MMcf	Industrial Sales Interruptible MMcf	Total Sales MMcf	Distrib.Co.Use & Losses MMcf	Less Peak-Shaving Gas MMcf					
1957-58	4,219	2,111	6,565	3,412	16,307	858		1,000	18,165	4,380		22,545
1958-59	22,346	5,148	26,755	29,518	83,767	4,409	7	1,000	89,169	3,285		92,454
1959-60	31,909	7,085	42,672	37,145	118,811	6,254	34	1,000	126,031	3,650	15,375	145,056
1960-61	42,784	8,990	52,494	52,719	156,987	8,262	60	1,000	166,189	3,650	18,375	188,214
1961-62	54,573	10,837	61,815	66,690	193,915	10,206	128	1,000	204,993	3,650	21,000	229,643
1962-63	67,002	12,712	64,403	72,343	216,460	11,392	396	-	227,456	3,650	24,000	255,106
1963-64	79,339	14,748	65,215	75,960	235,262	12,382	1,016	-	246,628	3,650	26,250	276,528
1964-65	89,712	17,037	68,476	86,148	261,373	13,756	2,182	-	272,947	3,650	29,450	306,047
1965-66	99,626	19,537	78,287	90,455	287,905	15,152	4,022	-	299,035	3,650	38,400	341,085
1966-67	110,215	22,229	82,201	101,368	316,013	16,632	6,972	-	325,673	3,650	42,075	371,398
1967-68	121,192	25,149	92,699	106,436	345,476	18,182	9,172	-	354,486	3,650	51,850	409,986
1968-69	132,275	27,717	97,338	118,148	375,478	19,761	10,001	-	385,238	3,650	56,000	444,888
1969-70	142,736	29,901	108,588	124,055	405,280	21,330	10,937	-	415,673	3,650	59,500	478,823
1970-71	153,356	31,882	114,017	136,648	435,903	22,942	11,727	-	447,118	3,650	63,000	513,768
1971-72	163,792	33,798	126,106	143,480	467,176	24,587	12,669	-	479,094	3,650	66,500	549,244
1972-73	174,191	35,498	132,411	157,044	499,144	26,270	13,457	-	511,957	3,650	70,000	585,607
1973-74	178,380	36,298	145,419	164,896	524,993	27,630	14,026	-	538,597	3,650	73,500	615,747
1974-75	191,938	38,834	152,690	179,531	562,993	29,630	15,036	-	577,587	3,650	77,000	658,237
1975-76	202,663	40,552	166,712	188,508	598,435	31,496	16,040	-	613,891	3,650	80,500	698,041
1976-77	211,855	41,931	175,048	204,323	633,157	33,323	16,786	-	649,694	3,650	84,000	737,344
1977-78	220,140	43,386	190,187	214,532	668,245	35,170	17,640	-	685,775	3,650	87,500	776,925
1978-79	230,370	45,070	199,697	231,656	706,793	37,199	18,518	-	725,474	3,650	91,000	820,124
1979-80	238,335	46,604	216,070	240,572	741,581	39,031	19,416	-	761,196	3,650	94,500	859,346
1980-81	246,795	48,271	226,873	250,175	772,114	40,638	20,211	-	792,541	3,650	98,000	894,191
1981-82	257,790	49,989	244,604	263,352	815,735	42,933	21,337	-	837,331	3,650	101,500	942,481
1982-83	266,415	51,661	256,835	273,112	848,023	44,633	22,177	-	870,479	3,650	105,000	979,129
1983-84	275,235	53,390	276,064	282,942	887,631	46,717	23,201	-	911,147	3,650	108,500	1,023,297
1984-85	287,520	55,334	289,867	297,966	930,687	48,983	24,313	-	955,357	3,650	112,000	1,071,007
1985-86	297,030	57,162	310,748	308,590	973,530	51,238	25,421	-	999,347	3,650	115,500	1,118,497
1986-87	306,510	58,990	326,285	319,356	1,011,141	53,218	26,395	-	1,037,964	3,650	119,000	1,160,614
1987-88	316,320	60,876	348,987	330,385	1,056,568	55,609	27,567	-	1,084,610	3,650	122,500	1,210,760
Totals For Period (31 Years)	5,216,563	1,032,727	4,746,128	5,151,465	16,146,883	849,823	390,864	5,000	16,610,842	113,515	2,051,775	18,776,132

1/ Estimated on basis of following contract demands and annual load factors: 1957-1958 - 20,000 Mcf Demand @ 60% L.F.; 1958-1959 - 10,000 Mcf Demand @ 90% L.F.; 1959-1960 and subsequent years - 10,000 Mcf Demand @ 100% L.F.

TRANS-CANADA PIPE LINES LIMITED

Summary Of Projected Maximum Day Gas Sales By Trans-Canada To Canadian Markets
(Other Than Montreal-Quebec Extension Markets)

TCPL Year (Nov. 1- Oct. 31)	Markets Other Than Saskatchewan Power Corporation And Union Gas Company									Saskatchewan Power Corporation	Union Gas Company (See Note 1/)	Total Canadian Maximum Day Sales By T.C.P.L.
	Residential Sales	Commercial Sales	Firm Industrial Sales	Total Sales	Distribution Company Use And Losses	Total Requirements	Less Peak-Shaving Gas	Less Gas From Storage	Total Requirements From T.C.P.L.			
1957-58	26,304	10,791	26,233	63,328	3,333	66,661	-	-	66,661	20,000	-	86,661
1958-59	171,948	30,200	86,602	288,750	15,197	303,947	2,271	50,000	251,676	10,000	-	261,676
1959-60	256,111	45,023	143,134	444,268	23,382	467,650	11,443	75,000	381,207	10,000	33,775	424,982
1960-61	353,479	59,653	175,226	588,358	30,965	619,323	20,103	100,000	499,220	10,000	40,728	549,948
1961-62	459,369	73,919	210,431	743,719	39,142	782,861	42,583	125,000	615,278	10,000	46,192	671,470
1962-63	570,509	88,249	219,281	878,039	46,211	924,250	79,238	125,000	720,012	10,000	52,649	782,661
1963-64	680,025	102,595	255,245	1,037,865	54,623	1,092,488	145,123	125,000	822,365	10,000	57,615	889,980
1964-65	768,231	119,078	268,007	1,155,316	60,804	1,216,120	218,224	125,000	872,896	10,000	64,669	947,565
1965-66	850,775	137,092	306,407	1,294,274	68,118	1,362,392	309,348	125,000	928,044	10,000	84,768	1,022,812
1966-67	938,820	156,824	321,727	1,417,371	74,596	1,491,967	410,090	125,000	956,877	10,000	92,880	1,059,757
1967-68	1,029,784	178,403	362,813	1,571,000	82,682	1,653,682	458,605	125,000	1,070,077	10,000	114,271	1,194,348
1968-69	1,124,393	196,920	380,954	1,702,267	89,590	1,791,857	500,057	125,000	1,166,800	10,000	123,430	1,300,230
1969-70	1,212,637	212,765	424,002	1,849,404	97,387	1,946,791	546,837	125,000	1,274,954	10,000	131,344	1,416,298
1970-71	1,302,162	227,108	446,252	1,975,522	103,972	2,079,494	586,348	125,000	1,368,146	10,000	139,073	1,517,219
1971-72	1,390,084	240,959	493,565	2,124,608	111,818	2,236,426	633,428	125,000	1,477,998	10,000	146,800	1,634,798
1972-73	1,477,728	253,513	518,243	2,249,484	118,390	2,367,874	672,862	125,000	1,570,012	10,000	154,522	1,734,534
1973-74	1,510,951	259,481	569,155	2,339,587	123,132	2,462,719	701,316	125,000	1,636,403	10,000	162,251	1,808,654
1974-75	1,623,669	278,135	597,613	2,499,417	131,544	2,630,961	751,788	125,000	1,754,173	10,000	169,973	1,934,146
1975-76	1,715,244	290,756	652,494	2,658,494	139,917	2,798,411	802,023	125,000	1,871,388	10,000	177,702	2,059,090
1976-77	1,790,738	300,615	685,119	2,776,472	146,126	2,922,598	839,279	125,000	1,958,319	10,000	185,430	2,153,749
1977-78	1,856,394	311,005	744,345	2,911,744	153,245	3,064,989	881,997	125,000	2,057,992	10,000	193,158	2,261,150
1978-79	1,946,464	322,739	781,594	3,050,797	160,563	3,211,360	925,908	125,000	2,160,452	10,000	200,880	2,371,332
1979-80	2,013,687	333,672	845,674	3,193,033	168,049	3,361,082	970,825	125,000	2,265,257	10,000	208,608	2,483,865
1980-81	2,085,268	345,599	887,958	3,318,825	174,670	3,493,495	1,010,549	125,000	2,357,946	10,000	216,337	2,584,283
1981-82	2,182,396	357,457	957,356	3,497,209	184,058	3,681,267	1,066,880	125,000	2,489,387	10,000	224,059	2,723,446
1982-83	2,255,429	369,401	1,005,224	3,630,054	191,050	3,821,104	1,108,831	125,000	2,587,273	10,000	231,788	2,829,061
1983-84	2,330,018	381,808	1,080,485	3,792,311	199,589	3,991,900	1,160,070	125,000	2,706,830	10,000	239,516	2,956,346
1984-85	2,438,666	395,253	1,134,509	3,968,428	208,858	4,177,286	1,215,686	125,000	2,836,600	10,000	247,238	3,093,838
1985-86	2,519,169	408,275	1,216,234	4,143,678	218,082	4,361,760	1,271,028	125,000	2,965,732	10,000	254,966	3,230,698
1986-87	2,599,569	421,297	1,277,046	4,297,912	226,199	4,524,111	1,319,733	125,000	3,079,378	10,000	262,695	3,352,073
1987-88	2,682,874	434,784	1,365,898	4,483,556	235,970	4,719,526	1,378,358	125,000	3,216,168	10,000	270,417	3,496,585

1/ Average daily sales to Union Gas Company during winter period.

TRANS-CANADA PIPE LINES LIMITED

Details Of Projection Of Annual And Maximum Day Residential Gas Sales Requirements In Canadian Markets Other Than Saskatchewan Power, Union Gas And Montreal-Quebec Extension Markets

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
						Annual Residential Gas Sales Requirements - MMcf					Maximum Day Residential Gas Sales Requirements - Mcf		
						General Use Gas		Heating Gas					
TCPL Year (Nov. 1-Oct. 31)	Number Of Dwelling Units (Thousands)	Residential Customer Factor - %	Residential Customers (Thousands) (Col. 1 x Col. 2)	House-Heating Saturation - %	Residential Heating Customers (Thousands) (Col. 3 x Col. 4)	Per Customer	Total (Col. 3 x Col. 6)	Per Customer	Total (Col. 5 x Col. 8)	Total Gas	Gen. Use @ 80% L. F. (Col. 7 ÷ 292 x 1,000)	Heating @ 27.4% L.F. (Col. 9 x 10)	Total
1957-58	1,396		130 1/		10 1/		2,416 1/		1,803 1/	4,219 1/	8,274 1/	18,030 1/	26,304 1/
1958-59	1,442		390 1/		82 1/		7,834 1/		14,512 1/	22,346 1/	26,828 1/	145,120 1/	171,948 1/
1959-60	1,490		555 1/		179 1/		9,578 1/		22,331 1/	31,909 1/	32,801 1/	223,310 1/	256,111 1/
1960-61	1,539	40.5	623 1/	41.0	256 1/		11,309 1/		31,475 1/	42,784 1/	38,729 1/	314,750 1/	353,479 1/
1961-62	1,588	43.3	688 1/	49.6	341 1/		13,134 1/	121	41,439 1/	54,573 1/	44,979 1/	414,390 1/	459,369 1/
1962-63	1,638	46.0	753 1/	57.1	430 1/	20.0	15,134 1/	121	51,868 1/	67,002 1/	51,829 1/	518,680 1/	570,509 1/
1963-64	1,690	48.6	821	62.0	509	21.0	17,241	122	62,098	79,339	59,045	620,980	680,025
1964-65	1,744	51.1	891	64.0	570	22.0	19,602	123	70,110	89,712	67,131	701,100	768,231
1965-66	1,799	53.5	962	65.0	625	23.0	22,126	124	77,500	99,626	75,775	775,000	850,775
1966-67	1,854	55.8	1,035	66.0	683	24.0	24,840	125	85,375	110,215	85,070	853,750	938,820
1967-68	1,911	58.0	1,108	67.0	742	25.0	27,700	126	93,492	121,192	94,864	934,920	1,029,784
1968-69	1,969	60.1	1,183	68.0	804	25.5	30,167	127	102,108	132,275	103,313	1,021,080	1,124,393
1969-70	2,029	61.9	1,256	68.5	860	26.0	32,656	128	110,080	142,736	111,837	1,100,800	1,212,637
1970-71	2,091	63.5	1,328	69.0	916	26.5	35,192	129	118,164	153,356	120,522	1,181,640	1,302,162
1971-72	2,155	64.8	1,396	69.5	970	27.0	37,692	130	126,100	163,792	129,084	1,261,000	1,390,084
1972-73	2,221	65.8	1,461	70.0	1,023	27.5	40,178	131	134,013	174,191	137,598	1,340,130	1,477,728
1973-74	2,288	66.5	1,482	70.0	1,037	28.0	41,496	132	136,884	178,380	142,111	1,368,340	1,510,951
1974-75	2,358	66.9	1,578	70.0	1,105	28.5	44,973	133	146,965	191,938	154,019	1,469,650	1,623,669
1975-76	2,430	67.2	1,633	71.0	1,159	29.0	47,357	134	155,306	202,663	162,184	1,553,060	1,715,244
1976-77	2,504	67.5	1,690	71.0	1,200	29.5	49,855	135	162,000	211,855	170,738	1,620,000	1,790,738
1977-78	2,580	67.8	1,749	71.0	1,242	30.0	52,470	135	167,670	220,140	179,694	1,676,700	1,856,394
1978-79	2,659	68.1	1,811	72.0	1,304	30.0	54,330	135	176,040	230,370	186,064	1,760,400	1,946,464
1979-80	2,740	68.4	1,874	72.0	1,349	30.0	56,220	135	182,115	238,335	192,537	1,821,150	2,013,687
1980-81	2,824	68.7	1,940	72.0	1,397	30.0	58,200	135	188,595	246,795	199,318	1,885,950	2,085,268
1981-82	2,910	68.9	2,005	73.0	1,464	30.0	60,150	135	197,640	257,790	205,996	1,976,400	2,182,396
1982-83	2,998	69.1	2,072	73.0	1,513	30.0	62,160	135	204,255	266,415	212,879	2,042,550	2,255,429
1983-84	3,090	69.3	2,141	73.0	1,563	30.0	64,230	135	211,005	275,235	219,968	2,110,050	2,330,018
1984-85	3,184	69.5	2,213	74.0	1,638	30.0	66,390	135	221,130	287,520	227,366	2,211,300	2,438,666
1985-86	3,281	69.7	2,287	74.0	1,692	30.0	68,610	135	228,420	297,030	234,969	2,284,200	2,519,169
1986-87	3,381	69.8	2,360	74.0	1,746	30.0	70,800	135	235,710	306,510	242,469	2,357,100	2,599,569
1987-88	3,483	69.9	2,435	74.0	1,802	30.0	73,050	135	243,270	316,320	250,174	2,432,700	2,682,874

1/ All volumes and numbers of customers shown above for the first six years were taken from detailed estimates of gas sales requirements of the various markets made on the basis of actual field investigations.

TRANS-CANADA PIPE LINES LIMITED

Details Of Projection Of Annual And Maximum Day Commercial (And Small Industrial) Gas Sales Requirements In Canadian Markets Other Than Saskatchewan Power, Union Gas And Montreal-Quebec Extension Markets

TCPL Year (Nov. 1- Oct. 31)	Residential Customers (Thousands)	Commercial Customers As A % Of Residential	Commercial Customers (Thousands)	Commercial Heating Saturation - %	Commercial Heating Customers (Thousands)	Annual Commercial Gas Requirements - MMcf: General Use Gas Per Customer	General Use Gas Total	Heating Gas Per Customer	Heating Gas Total	Total Gas	Maximum Day Commercial Gas Sales Requirements - Mcf: General Use @ 75% LF	Heating Gas @ 27.4% LF	Total
1957-58	130		16.8		2.2		1,625		486	2,111	5,931	4,860	10,791
1958-59	390		22.2		4.5		3,351		1,797	5,148	12,230	17,970	30,200
1959-60	555		29.7		8.3		4,067		[illegible]	7,385	14,843	30,180	[illegible]
1960-61	623	5.41	33.7	32.9	11.1	141.5	4,763	381	[illegible]	8,990	17,383	42,270	[illegible]
1961-62	688	5.41	37.2	37.1	13.8	145.8	5,425	392	5,412	10,837	19,799	54,120	[illegible]
1962-63	753	5.40	40.6	40.3	16.4	150.6	6,121	400	6,591	12,712	22,339	65,910	88,249
1963-64	821	5.55	45.6	42.0	19.2	155.0	7,068	400	7,680	14,748	25,795	76,800	102,595
1964-65	891	5.70	50.8	44.0	22.4	159.0	8,077	400	8,960	17,037	29,478	89,600	119,078
1965-66	962	5.85	56.3	46.0	25.9	163.0	9,177	400	10,360	19,537	33,492	103,600	137,092
1966-67	1,035	6.00	62.1	48.0	29.8	166.0	10,309	400	11,920	22,229	37,624	119,200	156,824
1967-68	1,108	6.15	68.1	50.0	34.1	169.0	11,509	400	13,640	25,149	42,003	136,400	178,403
1968-69	1,183	6.25	73.9	51.0	37.7	171.0	12,637	400	15,080	27,717	46,120	150,800	196,920
1969-70	1,256	6.25	78.5	52.0	40.8	173.0	13,581	400	16,320	29,901	49,565	163,200	212,765
1970-71	1,329	6.25	83.0	52.5	43.6	174.0	14,442	400	17,440	31,882	52,708	174,400	227,108
1971-72	1,396	6.25	87.3	53.0	46.3	175.0	15,278	400	18,520	33,798	55,759	185,200	240,959
1972-73	1,461	6.25	91.3	53.5	48.8	175.0	15,978	400	19,520	[illegible]	58,313	195,200	253,513
1973-74	1,482	6.25	92.6	54.0	50.0	176.0	16,298	400	[illegible]	36,298	59,481	200,000	259,481
1974-75	1,578	6.25	98.6	54.5	53.7	176.0	17,354	400	[illegible]	[illegible]	63,335	214,800	278,135
1975-76	1,633	6.25	102.1	55.0	56.2	177.0	[illegible]	[illegible]	[illegible]	[illegible]	65,956	224,800	290,756
1976-77	1,690	6.25	105.6	55.0	58.1	177.0	[illegible]	[illegible]	[illegible]	41,931	68,215	232,400	300,615
1977-78	1,749	6.25	[illegible]	[illegible]	[illegible]	177.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	240,400	311,005
1978-79	1,811	6.25	113.2	[illegible]	[illegible]	178.0	[illegible]	400	[illegible]	[illegible]	73,539	249,200	322,739
1979-80	1,874	6.25	117.1	[illegible]	[illegible]	179.0	[illegible]	400	[illegible]	[illegible]	76,072	257,600	333,672
1980-81	[illegible]	6.25	[illegible]	[illegible]	[illegible]	[illegible]	21,591	[illegible]	[illegible]	[illegible]	78,799	266,800	345,599
1981-82	[illegible]	6.25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	275,600	[illegible]
1982-83	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	284,800	[illegible]
1983-84	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	294,400	[illegible]
1984-85	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	180.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	304,400	395,253
1985-86	[illegible]	[illegible]	142.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	314,400	408,275
1986-87	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1987-88	2,435	6.25	152.2	55.0	83.7	180.0	27,396	400	33,480	60,876	99,984	334,800	434,784

Note: All volumes and numbers of customers shown above for the first six years were taken from detailed estimates of gas sales requirements of the various markets made on the basis of actual field investigations.

TRANS-CANADA PIPE LINES LIMITED

Details Of Projected Gas Sales To Union Gas Company Of Canada

TCPL Year (Nov. 1 - Oct. 31)	Total Annual Contract Volumes MMcf	Total Annual Est. Sales MMcf	Total Annual % Of Contract Volumes	November 1 - March 31 Period (151 Days) Contract Volumes MMcf	Nov. 1 - Mar. 31 Est. Sales MMcf	Nov. 1 - Mar. 31 % Of Contract Volumes	Avg. Day Sales 2/ Mcf
1959-60	20,500	15,375	75.0	6,800	5,100	75.0	33,775
1960-61	24,500	18,375	75.0	8,200	6,150	75.0	40,728
1961-62	28,000	21,000	75.0	9,300	6,975	75.0	46,192
1962-63	32,000	24,000	75.0	10,600	7,950	75.0	52,649
1963-64	35,000	26,250	75.0	11,600	8,700	75.0	57,615
1964-65	38,000	29,450	77.5	12,600	9,765	77.5	64,669
1965-66	48,000	38,400	80.0	16,000	12,800	80.0	84,768
1966-67	51,000	42,075	82.5	17,000	14,025	82.5	92,880
1967-68	61,000	51,850	85.0	20,300	17,255	85.0	114,271
1968-69	64,000 1/	56,000	87.5	21,300	18,638	87.5	123,430
1969-70		59,500	92.97		19,833	93.0	131,344
1970-71		63,000	98.44		21,000		139,073
1971-72		66,500			22,167		146,800
1972-73		70,000			23,333		154,522
1973-74		73,500			24,500		162,251
1974-75		77,000			25,666		169,973
1975-76		80,500			26,833		177,702
1976-77		84,000			28,000		185,430
1977-78		87,500			29,167		193,158
1978-79		91,000			30,333		200,880
1979-80		94,500			31,500		208,608
1980-81		98,000			32,667		216,337
1981-82		101,500			33,833		224,059
1982-83		105,000			35,000		231,788
1983-84		108,500			36,167		239,516
1984-85		112,000			37,333		247,238
1985-86		115,500			38,500		254,966
1986-87		119,000			39,667		262,695
1987-88		122,500			40,833		270,417

1/ Contract presently provides for 64,000 MMcf in 1968-69 and thereafter. The above estimates assume that the contract will be amended to provide for delivery of the increasing requirements of Union shown.

2/ Under Trans-Canada's contract with Union Gas Company, sales and deliveries to Union may be 100% curtailed or interrupted on any day or days by Trans-Canada. However, Trans-Canada is obligated to deliver specified minimum volumes during the winter period Nov. 1 - March 31. Accordingly, for purposes of design and in this study, Trans-Canada's average daily delivery obligation during this period is considered to be its maximum daily delivery obligation to Union.

U N I T E D   S T A T E S   M A R K E T S

PRESENT AND POTENTIAL EXPORT NATURAL GAS MARKETS OF TRANS-CANADA PIPE LINES LIMITED

I. Market Areas Covered

The homes, commercial establishments and industries in the northern and northeastern United States offer a potential market which could be served in part with Canadian natural gas supplied in export by Trans-Canada Pipe Lines Limited through an existing connection at Niagara Falls, New York, a proposed connection near Emerson, Manitoba, or a possible future connection near Rouses Point, New York. The size of this present market and an estimate of its future growth is presented in Table I. This projection of the market potential is shown for three market areas, designated on the table as Market Areas No. 1, No. 2 and No. 3. They are geographically defined as follows:

Market Area No. 1	-	North Dakota and Montana.
Market Area No. 2	-	Illinois, Minnesota and Wisconsin.
Market Area No. 3	-	Connecticut, Massachusetts, New Hampshire, Rhode Island and New York outside the New York City metropolitan area.

A recapitulation of the total potential gas market in the three market areas is included in the table.

II. Basis for Market Projections

In making these market projections the present trends of gas sales in the three market areas were considered. It was realized, however, that to a degree that varies between areas, the natural gas industry is a young industry. A conservative and sound long-term projection must recognize that the effects of maturity and market saturation will be felt increasingly in the future. The estimate of the effect of saturation on present market trends was based on the experience in other areas of the United States where natural gas has been available for a longer period, on population forecasts by the United States Census Bureau, and on estimates of ultimate gas house-heating saturation compiled by the American Gas Association from the estimates of gas company managers in the field.

The projections of firm industrial requirements were based upon a published estimate of the American Gas Association for the years 1956 through 1960. The American Gas Association estimates for these years were related to the population estimates for the same years, and were projected into the future on a per capita basis.

The projection of the potential market for interruptible gas was based upon a computation of the availability of such gas in each market area. The amount of interruptible gas available is dependent on the load factor of the firm gas sales and on the extent by which the peak requirements are supplied by peak-shaving gas or gas from underground storage. For the purposes of this study it was assumed that non-heating gas sales

would have a load factor of 70%, heating gas a load factor of 26% and that 20% of peak-day requirements would be supplied by local peak-shaving facilities.

As a corollary to the projection of potential future markets for gas, the population projection which served as a basis for the projection of gas markets is shown in Table II. It is based upon a United States Census Bureau estimate for the years 1960 to 1970, as described in more detail on the face of the table. Historical statements of the natural gas sales and total gas sales from 1945 to 1956 are shown in Tables III and IV respectively. It was not possible, from the information available, to break down the historical industrial sales between firm and interruptible. Both categories are included in the industrial totals shown. The total industrial sales for 1956 shown in Tables I and III do not agree, since the former figure, in order to be consistent with the basis of projection of industrial sales, represents availability of interruptible gas and the latter includes actual interruptible sales. The rapid increase in natural gas sales in Market Area No. 3 during this period reflects the conversion of the New England states from manufactured to natural gas consuming areas in late 1951, 1952 and 1953.

III. Present Sources of Gas Supply

In considering the opportunities presented to Trans-Canada Pipe Lines Limited to secure some part of these expanding United States markets, it is pertinent to examine the present sources of natural gas supply to

these areas. The natural gas pipeline systems of the United States are shown on the attached Federal Power Commission map as they existed at June 30, 1957.

As will be seen from the map, the United States sources of natural gas for Market Area No. 1, comprising the states of North Dakota and Montana, are principally from fields within or close to these states. In addition to these sources the area is supplied, to the extent of 18% of its requirements, with Canadian gas from fields in the extreme south-east corner of Alberta.

Market Area No. 2, comprising the states of Illinois, Minnesota and Wisconsin, is supplied by several pipeline systems with gas principally from the Mid-continent and Gulf Coast producing areas. The states of Minnesota and Wisconsin are supplied, insofar as they are supplied, from the Panhandle-Hugoton area of Kansas, Oklahoma and Texas. The state of Illinois, in its northerly and most populous part where the principal potential market for Canadian gas in the state may be considered to exist, is supplied from the Panhandle field in Texas, the Gulf Coast area, and from fields in west Kansas and Colorado.

Turning to Market Area No. 3, comprising New England and up-state New York, the original natural gas supply in upstate New York was from the Appalachian area. The gas supply to the entire area at the present time includes some remaining gas from the Appalachian area but the major part originates in east Texas, Louisiana and the Gulf Coast area.

IV. Projected Midwestern Pipeline System

Shown on the map in red, and numbered 119, is the projected pipeline system of Midwestern Gas Transmission Company, a subsidiary of Tennessee Gas Transmission Company. This company has a contract with Trans-Canada Pipe Lines Limited for the purchase initially of 200,000 Mcf per day at the Canadian-United States border near Emerson, Manitoba. The Federal Power Commission is currently considering the application of Midwestern for a certificate of public convenience and necessity for this project.

V. Conclusions

In conclusion, it is apparent that the natural gas market in the areas considered will continue to grow and expand far beyond the capacity of the presently installed facilities to supply it. This expanding market will be served with natural gas either from the United States or from Canada. The Canadian gas industry should find itself advantageously placed to compete for such part of the total as it may desire, or as may be determined to be in the best interests of the Canadian people.

TRANS-CANADA PIPE LINES LIMITED

PROJECTION OF UNITED STATES POTENTIAL NATURAL GAS MARKETS

Annual Volumes - Billions Of Cubic Feet - 1,000 Btu

	1956	1957	1958	1959	1960	1965	1970	1975	1980	1985	1990	1995	2000
Market Area No. 1													
(North Dakota and Montana)													
Residential	19	20	22	23	25	32	34	36	38	39	41	42	44
Commercial	11	12	12	13	13	16	17	17	18	18	19	20	21
Industrial Firm	11	12	12	12	12	12	12	13	13	14	14	15	15
Total Firm	41	44	46	48	50	60	63	66	69	71	74	77	80
Industrial Interruptible	39	38	40	43	47	61	65	69	72	75	78	81	84
Total Sales	80	82	86	91	97	121	128	135	141	146	152	158	164
Market Area No. 2													
(Illinois, Wisconsin and Minnesota)													
Residential	234	255	277	300	323	458	624	618	655	693	734	778	824
Commercial	44	48	52	56	60	82	98	111	125	141	149	158	167
Industrial Firm	96	110	134	149	155	178	204	231	261	288	318	349	385
Total Firm	374	413	463	505	538	718	926	960	1,041	1,122	1,201	1,285	1,376
Industrial Interruptible	334	375	424	468	510	747	1,041	1,038	1,111	1,187	1,263	1,344	1,431
Total Sales	708	788	887	973	1,048	1,465	1,967	1,998	2,152	2,309	2,464	2,629	2,807
Market Area No. 3													
(Connecticut, Massachusetts, New Hampshire, Rhode Island and New York outside the New York City Metropolitan Area)													
Residential	172	181	190	199	207	254	304	355	411	436	462	490	520
Commercial	27	28	29	30	32	38	43	48	54	60	63	67	71
Industrial Firm	13	18	21	23	26	39	54	70	88	108	130	155	182
Total Firm	212	227	240	252	265	331	401	473	553	604	655	712	773
Industrial Interruptible	197	214	231	248	264	349	441	531	637	685	734	787	844
Total Sales	409	441	471	500	529	680	842	1,004	1,190	1,289	1,389	1,499	1,617
Recapitulation													
Market Areas Nos. 1, 2 and 3													
Residential	425	456	489	522	555	744	962	1,009	1,104	1,168	1,237	1,310	1,388
Commercial	82	88	93	99	105	136	158	176	197	219	231	245	259
Industrial Firm	120	140	167	184	193	229	270	314	362	410	462	519	582
Total Firm	627	684	749	805	853	1,109	1,390	1,499	1,663	1,797	1,930	2,074	2,229
Industrial Interruptible	570	627	695	759	821	1,157	1,547	1,638	1,820	1,947	2,075	2,212	2,359
Total Sales	1,197	1,311	1,444	1,564	1,674	2,266	2,937	3,137	3,483	3,744	4,005	4,286	4,588

TRANS-CANADA PIPE LINES LIMITED

PROJECTION OF POPULATION IN UNITED STATES POTENTIAL NATURAL GAS MARKET AREAS

(Millions Of People)

	1956	1957	1958	1959	1960	1965	1970	1975	1980	1985	1990	1995	2000
Market Area No. 1													
(North Dakota and Montana)	1.30	1.31	1.31	1.31	1.31	1.35	1.39	1.44	1.48	1.53	1.59	1.64	1.70
Market Area No. 2													
(Illinois, Wisconsin and Minnesota)	16.53	16.82	16.96	17.10	17.24	18.21	19.92	20.44	21.65	22.93	24.29	25.73	27.25
Market Area No. 3													
(Connecticut, Massachusetts, New Hampshire, Rhode Island and New York outside the New York City Metropolitan Area)	15.44	15.59	15.82	16.06	16.29	17.15	18.14	19.19	20.12	21.30	22.54	23.86	25.27
Total													
Market Areas No. 1, 2 and 3	33.27	33.72	34.09	34.47	34.84	36.71	39.45	41.07	43.25	45.76	48.42	51.23	54.22

Note

1956 and 1957 population estimates are from "Provisional Estimates of the Population of States and Selected Outlying Areas of the United States: July 1, 1957. Series P-25 No. 168" by the Bureau of the Census, U. S. Department of Commerce. 1960, 1965 and 1970 population estimates are based on "Current Population Reports, Population Estimates" Series P-25 No. 160 by the Bureau of the Census. The figures shown above for these years were obtained by averaging four estimates in the Census publication and adjusting the result to reflect a revised estimate of 1955 population. The estimates for the years subsequent to 1970 were made by applying the percentage increases estimated by the Bureau of the Census for 1965-1970 to the later five-year periods.

TRANS-CANADA PIPE LINES LIMITED

NATURAL GAS SALES IN UNITED STATES MARKET AREAS 1945 TO 1956

Annual Volumes - Billions of Cubic Feet - 1,000 Btu

	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
Market Area No. 1 (North Dakota and Montana)												
Residential	9	9	11	12	13	14	15	14	14	16	18	19
Commercial	6	6	6	7	6	7	8	8	8	9	11	11
Industrial	14	12	13	13	14	15	17	19	18	16	20	21
Total Sales	29	27	30	32	33	36	40	41	40	41	49	51
Market Area No. 2 (Illinois, Wisconsin and Minnesota)												
Residential	35	40	52	69	76	103	124	145	160	183	205	234
Commercial	10	12	15	17	20	25	28	31	33	36	39	44
Industrial	97	90	85	108	128	162	184	238	238	294	288	301
Total Sales	142	142	152	194	224	290	336	414	431	513	532	579
Market Area No. 3 (Connecticut, Massachusetts, New Hampshire, Rhode Island and New York outside the New York City Metropolitan Area)												
Residential	22	24	31	34	37	47	64	90	98	123	143	172
Commercial	3	4	5	6	7	8	11	14	15	16	19	27
Industrial	6	6	7	7	8	10	15	18	21	25	37	42
Total Sales	31	34	43	47	52	65	90	122	134	164	199	241
Recapitulation (Market Areas Nos. 1, 2 and 3)												
Residential	66	73	94	115	126	164	202	249	272	322	366	425
Commercial	19	22	26	29	33	40	47	53	56	61	69	82
Industrial	117	108	105	128	150	187	216	275	277	335	345	364
Total Sales	202	203	225	272	309	391	465	577	605	718	780	871

TRANS-CANADA PIPE LINES LIMITED

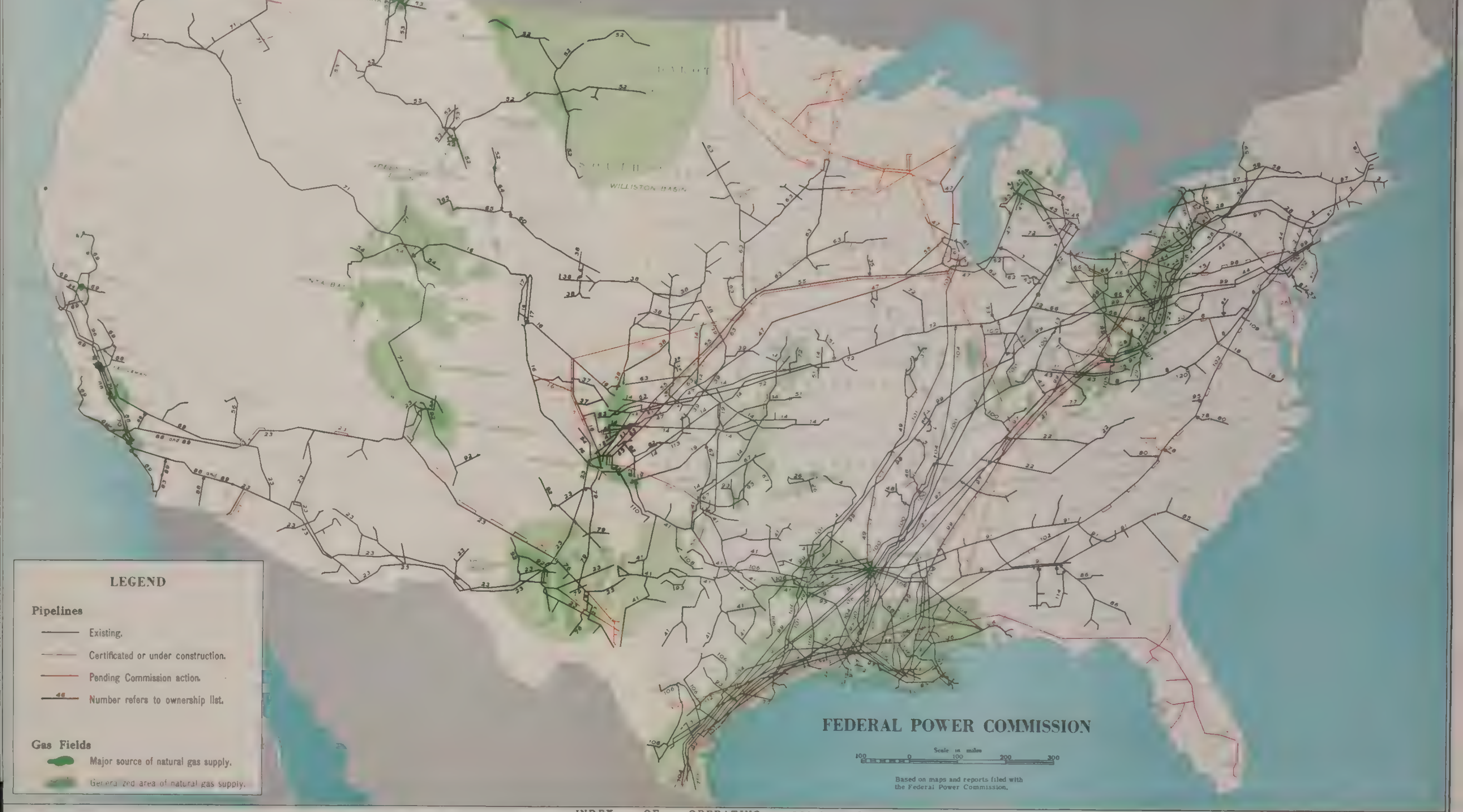
TOTAL GAS SALES IN UNITED STATES MARKET AREAS 1945 TO 1956

Annual Volumes - Billions Of Cubic Feet - 1,000 Btu

	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
Market Area No. 1 (North Dakota and Montana)												
Residential	9	9	11	12	13	14	15	14	14	16	18	19
Commercial	6	6	6	7	6	7	8	8	8	9	11	11
Industrial	14	12	13	13	14	15	17	19	18	16	20	21
Total Sales	29	27	30	32	33	36	40	41	40	41	49	51
Market Area No. 2 (Illinois, Wisconsin and Minnesota)												
Residential	53	59	73	80	86	107	128	149	163	187	209	238
Commercial	13	15	18	21	23	28	30	33	35	37	40	44
Industrial	102	95	90	112	132	167	188	242	242	296	290	303
Total Sales	168	169	181	213	241	302	346	424	440	520	539	585
Market Area No. 3 (Connecticut, Massachusetts, New Hampshire, Rhode Island and New York outside the New York City Metropolitan Area)												
Residential	53	58	69	73	72	85	97	106	112	135	153	179
Commercial	8	9	10	11	11	13	15	16	17	18	20	28
Industrial	15	15	16	18	17	22	26	28	30	33	42	45
Total Sales	76	82	95	102	100	120	138	150	159	186	215	252
Recapitulation (Market Areas Nos. 1, 2 and 3)												
Residential	115	126	153	165	171	206	240	269	289	338	380	436
Commercial	27	30	34	39	40	48	53	57	60	64	71	83
Industrial	131	122	119	143	163	204	231	289	290	345	352	369
Total Sales	273	278	306	347	374	458	524	615	639	747	803	888

MAJOR NATURAL GAS PIPELINES

AS OF JUNE 30, 1957



INDEX OF OPERATING COMPANIES

1 Alabama-Tennessee Natural Gas Co.
2 [illegible]
3 [illegible]
4 [illegible]
5 [illegible]
6 [illegible]
8 [illegible]
10 Central Kentucky Natural Gas Co.
12 Chicago District Pipeline Co.
13 Cincinnati Gas & Electric Co., The
14 Cities Service Gas Co.
15 [illegible]
17 Colorado-Wyoming Gas Co.
18 Commonwealth Natural Gas Corp.
19 Consolidated Gas Utilities Corp.
20 Cumberland & Allegheny Gas Co.
21 East Ohio Gas Co., The
22 East Tennessee Natural Gas Co.
23 El Paso Natural Gas Co.
24 Equitable Gas Co.
26 Fort Smith Gas Corp.
27 [illegible] Interstate Gas Co.
28 Home Gas Co.
29 Hope Natural Gas Co.
30 Houston Pipeline Co.
31 Illinois Power Co.
32 Independent Natural Gas Co.
33 Indiana Gas & Water Co., Inc.
35 Iowa-Illinois Gas & Electric Co.
36 Iroquois Gas Corp.
37 Kansas-Colorado Utilities Co.
38 Kansas-Nebraska Natural Gas Co.
39 Kansas Power & Light Co.
40 [illegible]
42 [illegible]
43 [illegible]
44 [illegible] Light & Heat Co., The
45 Michigan Consolidated Gas Co.
46 Michigan Gas Storage Co.
47 Michigan-Wisconsin Pipe Line Co.
48 Mid-South Gas Co.
50 [illegible] River Fuel Corp.
51 Missouri Public Service Co.
52 Montana-Dakota Utilities Co.
53 Montana Power Co.
54 Mountain Fuel Supply Co.
55 Natural Gas Pipeline Co. of America
56 Nevada Natural Gas Pipe Line Co.
57 New Jersey Natural Gas Co.
58 New York State Natural Gas Corp.
59 Niagara Mohawk Power Corp.
60 North Central Gas Co.
Northern Illinois Gas Co.
62 Northern Indiana Public Service Co.
63 Northern Natural Gas Co.
64 Northern Pipe Line Co.
65 Northern Utilities Co.
66 Ohio Fuel Gas Co., The
67 Oklahoma Natural Gas Co.
68 Olin Gas Transmission Corp.
69 [illegible]
70 [illegible]
71 [illegible]
72 [illegible]
73 [illegible]
74 [illegible]
75 [illegible] The
76 Permian Basin Pipeline Co.
77 Petroleum Exploration, Inc.
78 Piedmont Natural Gas Co., Inc.
80 [illegible]
81 Public Service Co. of N. C., Inc.
82 Public Service Corp. of Texas
83 San Diego Gas & Electric Co.
84 Shenandoah Gas Co.
85 South Carolina Natural Gas Co.
86 [illegible]
87 [illegible]
88 [illegible]
89 [illegible] Co. of Calif.
90 Southern Gas Lines, Inc.
91 Southern Natural Gas Co.
92 Southern Union Gas Co.
93 Southwest Natural Gas Co.
94 Southwestern Public Service Co.
95 [illegible]
96 Standard Pacific Gas Lines, Inc.
97 Tennessee Gas Transmission Co.
98 Texas Eastern Penn-Jersey Trans. Corp.
99 Texas Eastern Transmission Corp.
100 Texas Gas Transmission Corp.
101 Texas [illegible] Natural Gas Pipe Line Co.
102 Transcontinental Gas Pipe Line Corp.
104 [illegible]
105 United Fuel Gas Co.
106 United Gas Pipe Line Co.
107 United Natural Gas Co.
108 Upham Gas Company
109 Washington Gas Light Co.
110 West Texas Utilities Co.
112 [illegible] Trend Gathering System, Inc.
113 Zenith Gas System, Inc.
114 Southeast Alabama Gas District
115 Trans-Penn Trans. Corp.
116 [illegible]
117 [illegible]
119 [illegible]
120 [illegible]
121 [illegible]
124 Piedmont [illegible]
125 [illegible] Gathering System, Inc.
126 [illegible]

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